

ABSTRACT OF THE DISCLOSURE

The invention relates to a method and apparatus for improving properties of a solid material by providing shockwaves there through. Laser shock processing is used to provide the shockwaves. The method includes applying a liquid energy-absorbing overlay, which is resistant to erosion and dissolution by the transparent water overlay and which is resistant to drying to a portion of the surface of the solid material and then applying a transparent overlay to the coated portion of the solid material. A pulse of coherent laser energy is directed to the coated portion of the solid material to create a shockwave. Advantageously, at least a portion of the unspent energy-absorbing overlay can be reused *in situ* at a further laser treatment location and/or recovered for later use.